Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

1.   (Currently Amended) A method for measuring the maturity or cell wall thickening of a sample of cellulosic fibre comprising a plurality of individual fibres, the method including the steps of:

       a) exposing the sample of fibre to polarised light;

       b) capturing one or more images of the sample through crossed polar lenses and compensator plate so that the image(s) include interference colours from the sample; and

       c) conducting computer analysis on the image(s) captured in step b) to determine the maturity of the cellulosic fibre by comparing the image(s) interference data to maturity reference data, and wherein an average value of fibre maturity and a fibre maturity distribution is determined for the sample of fibre.

2.   (Previously Presented) The method according to claim 1, wherein step c) involves determining the area of particular interference colours in the image(s).

3.   (Previously Presented) The method according to claim 2, wherein the area of interference colours in the image(s) is determined by analysing the areas of any one or a combination of yellow, red, green and blue in the image(s).

4.   (Previously Presented) The method according to claim 2, wherein the image(s) captured are a digital image(s), or are converted into a digital image(s), and the area of particular interference colours appearing in the image(s) is determined by analysing the number of pixels in the image(s) of a particular colour.

5.   (Currently Amended) The method according to claim 1, wherein conducting computer analysis involves using an algorithm to compare the interference colours of the image(s) captured with reference maturity data to determine the at least one of an average value of fibre

<u>maturity and a fibre maturity distribution</u> ~~an average value and/or distribution of maturity values~~ for the sample.

6.   (Previously Presented) The method according to claim 1, wherein step c) involves determining a total area of fibre appearing in the image(s).

7.   (Previously Presented) The method according to claim 6, wherein the total area of fibre in the image(s) is determined by any one or a combination of the following:

    i) the number of fibres in the image(s);

    ii) the length of fibre in the image(s);

    iii) the ribbon width of the fibre in the image(s); and

    iv) the number of convolutions or twists per unit length of the fibre in the image(s).

8.   (Previously Presented) The method according to claim 7, whereby when image(s) captured are colour, the method involves converting the image(s) in colour into monochrome image(s) in determining any one of features i) to iv).

9.   (Previously Presented) The method according to claim 7, whereby when the image(s) are captured as digital image(s), or are converted into digital image(s), the method involves pixel analysis in determining any one of features i) to iv).

10.   (Previously Presented) The method according to claim 1, further including determining the degree of attack on the fibre of the sample using computer analysis of the images to determine the number and dimensions of surface fractures.

11.   (Previously Presented) The method according to claim 10, wherein the number and dimensions of surface fractures of the fibres is determined by pixel anaylsis.

12.   (Previously Presented) The method according to claim 1, wherein the image(s) of the fibre captured in step b) is/are captured while the fibre is randomly spread over a microscope slide at a density that does not mitigate expression of the interference colours.

13.　(Previously Presented) The method according to claim 12, wherein the density of fibre ranges from 200 to 300 $\mu g/cm^2$.

14.　(Previously Presented) The method according to claim 1, wherein the image(s) capture the fibres at a magnification ranging from 1.5 to 5 times its normal size.

15.　(Previously Presented) The method according to claim 1, wherein the method also includes capturing a series of images, each of a different segment of the sample fibres, and that an average value and/or fibre maturity distribution is determined from the images.

16.　(Previously Presented) The method according to claim 4, wherein the size of each pixel is equal to or greater than 6.45 μm x 6.45 μm.

17.-23 (Cancelled)

24.　(New) A method for measuring the maturity or cell wall thickening of a sample of cellulosic fibre comprising a plurality of individual fibres, the method including the steps of:

　　a)　exposing the sample of fibre to polarised light;

　　b)　capturing a series of images of the sample of fibre through crossed polar lenses and a compensator plate so that the image(s) include interference colours; and

　　c)　conducting computer analysis on the image(s) captured in step b) to determine the maturity of the cellulosic fibre by comparing the image(s) interference data to maturity reference data, wherein the analysis includes determining the interference data of the images as a percentage of an area of any one or a combination of yellow, red, green, and blue interference colours in the images to a total area of fibre in the images, and comparing the percentage area to the maturity reference data to determine at least one of an average value of the fibre maturity for the fibre in the images(s) and a fibre maturity distribution for the fibre in the images.

25.　(New) A method for measuring the maturity or cell wall thickening of a sample of cellulosic fibre comprising a plurality of individual fibres, the method including the steps of:

a)   randomly distributing the sample of fibre over a transparent support member;

b)   exposing the sample of fibre on the transparent support member to polarised light;

c)   capturing a series of digital images of segments of the sample through crossed polar lenses and a compensator plate so that the images include interference colours, and wherein each image captured includes the interference colours of the respective segments of the sample of fibre; and

d) conducting computer analysis on the images captured in step b) to determine the maturity of the cellulosic fibre by comparing interference data of the images to maturity reference data, wherein the analysis includes determining the total area of the fibre captured in the images as a percentage of an area of any one or a combination of yellow, red, green, and blue interference colours in the images to the total area of fibre in the images by pixel analysis, and comparing the interference data to the maturity reference data to determine at least one of an average value of the fibre maturity for the fibre in the images and a fibre maturity distribution for the fibre in the images.